NON-PUBLIC?: N
ACCESSION #: 8802160253

LICENSEE EVENT REPORT (LER)

FACILITY NAME: Fermi 2 PAGE: 1 of 4

DOCKET NUMBER: 05000341

TITLE: High Pressure Coolant Injection and Reactor Core Isolation Cooling Actuated Following a Reactor Scram
EVENT DATE: 01/10/88 LER #: 88-004-00 REPORT DATE: 02/09/88

OPERATING MODE: 1 POWER LEVEL: 049

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION
50.73(a)(2)(ii)

LICENSEE CONTACT FOR THIS LER:
NAME: Patricia Anthony, Compliance Engineer TELEPHONE #: 313-586-1617

COMPONENT FAILURE DESCRIPTION:
CAUSE: X SYSTEM: SJ COMPONENT: FCO MANUFACTURER: XXXX
REPORTABLE TO NPRDS: Y

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT: On January 10, 1988, the North Reactor Feed Pump speed control power supply failed. The pump responded to the loss of control signal. A low reactor vessel water level resulted which caused a reactor scram. High Pressure Coolant Injection and Reactor Core Isolation Cooling Systems actuated along with the appropriate isolations.

The cause for the Feedwater transient was that the overvoltage trip for the power supply had drifted into the normal operating range. The power supply was replaced and the overvoltage protection was set to the maximum value.

During restoration of the RWCU System, a Technical Specification requirement was exceeded. The Technical Specification Action Statement for defeating the high temperature isolation function of the RWCU isolation valves does not allow sufficient time to restart the RWCU System during high operator activity periods. A Technical Specification change will be submitted to delete the requirement for RWCU isolations on high non-regenerative heat exchanger outlet temperature indication.

(End of Abstract)

Initial Plant Conditions:

Operational Condition: 1 (Power Operations)
Reactor Power: 54.0 Percent
Reactor Pressure: 934 psig

Reactor Temperature: 510 degrees Fahrenheit

Description of Event:

On January 10, 1988, the power supply, N21-KA048 to the North Reactor Feed Pump (NRFP) speed control (JK) failed at 0958 hours and 56 seconds. The North Reactor Feed Pump's (SJ) speed decreased to zero as a result of the loss of control signal. The South Reactor Feed Pump (SRFP) (SJ) was not in service at the time. The operators began feeding the Reactor Pressure Vessel (RPV) with Standby Feedwater (SBFW) after the reactor vessel low water level scram, while attempting to place the SRFP in service.

At 0959 hours and 14 seconds, a low reactor vessel water level caused a reactor scram. Reactor water level continued to drop and when low-low level was reached High Pressure Coolant Injection (HPCI) (BJ) and Reactor Core Isolation automatically initiated. Reactor water level was restored.

At 1012 hours, the Nuclear Shift Supervisor declared an unusual event due to the automatic actuation of HPCI. At 1013 hours, the reactor scram signal was reset. Notifications for the unusual event were made. At 1055 hours, the unusual event was terminated.

During the reactor scram, several systems isolated including the Reactor Water Cleanup System (RWCU) (CE) system. A secondary isolation occurred as the system reached thermal equilibrium. This resulted in a high non-regenerative heat exchanger effluent temperature trip. In order to reestablish forced core circulation with the reactor recirculation system, the RWCU system had to be placed in service so that an accurate bottom head temperature could be taken.

At 1115 hours, by procedure, the isolation logic was defeated by installing jumpers to open the isolation valves and return RWCU to service. This defeated the non-regenerative heat exchanger effluent temperature isolation and placed the plant in a one hour Limiting Condition of Operation (LCO) per

Technical Specification 3.3.2.

As the one hour time limit was expiring only one Reactor Water Cleanup pump was operating. Only one of the 3 annunciators for the non-regenerative heat exchanger outlet temperature had been verified to be clear.

At 1225 hours, the prerequisites had been met and an Instrument Repairman removed the jumpers.

Cause of the Event:

The overvoltage trip setpoint for the power supply had drifted into the normal operating region. This caused the power supply to trip on overvoltage when an actual overvoltage condition did not exist.

The overvoltage trip had been set at ten percent of the operating value instead of fifteen percent plus one volt as recommended in the vendor's manual during installation. This had been set by an Instrument Repairman (contractor non-licensed). The original power supply did not have overvoltage protection. The repairman failed to see the instructions for setting the new power supply's overvoltage trip as described in the vendor's manual, when installing the new power supply on January 7, 1988.

The Technical Specification Action Statement for restoring the RWCU was not met since the procedure is difficult to perform. Extended delays were encountered while operators dressed out to enter the RWCU pump rooms for the fill and vent and system warm-up operations. The RWCU pump rooms are contaminated and are posted as high radiation areas. The one hour LCO used for opening the isolation valves by use of a jumper does not allow sufficient time to restart the RWCU system during high operator activity periods such as scram recovery.

Analysis of the Event:

The safety systems when challenged functioned as designed during the reactor scram. The Reactor Protection system logic (JC), when challenged, functioned as designed. This transient is bounded by the accident analysis for decreasing of reactor water coolant inventory. The safety systems functioned properly and core cooling was maintained. No other components, structures, systems or conditions of the work place contributed to this event. Therefore, the safety for the plant and public was maintained.

Corrective Action:

The failed power supply was replaced and the overvoltage setting for both of the feedwater pump governor power supplies was set to the maximum value. This was completed on January 10, 1988. The failed power supply is being sent to the vendor for evaluation to determine if the drift experienced is excessive.

The repairman was counseled in accordance with company policy.

A Technical Specification change will be submitted to delete the requirement for RWCU isolations on high non-regenerative heat exchanger outlet temperature indication. This is scheduled to be completed by the end of April, 1988.

Previous Similar Events:

There have been four previous reactor scrams associated with low RPV water level signals. This is the first time a low RPV water level signal has caused HPCI and RCIC actuations.

This is the first report of the RWCU isolation logic being jumpered out in excess of the Technical Specification Limit.

ATTACHMENT # 1 TO ANO # 8802160253 PAGE: 1 of 1

William S. Orser 10CFR50.73
Vice President
Nuclear Operations

Fermi 2 February 9, 1988
DETROIT EDISON NRC-88-0019
6400 North Dixie Highway
Nerport, Michigan 48166
(313) 586-5300

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Reference: Fermi 2
NRC Docket No. 50-341
Facility Operating License No. NPF-43

Subject: Licensee Event Report (LER) No. 88-004-00

Please find enclosed LER No. 88-004-00, dated February 9, 1988, for a reportable event that occurred on January 10, 1988. A copy of this LER is also being sent to the Regional Administrator, USNRC Region III.

If you have any questions, please contact Patricia Anthony at (313) 586-1617.

Sincerely,
/s/ ILLEGIBLE for
W. S. Orser
Vice President
Nuclear Operations

Enclosure: NRC Forms 366, 366A
cc: A. B. Davis
J. R. Eckert
E. G. Greenman
T. R. Quay
W. G. Rogers

Wayne County Emergency
Management Division

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